Amendments to the Specification:

On page 1, after the title and before line 1, please insert the heading:

Background

Please amend the paragraph starting on page 1, line 5 and continuing to page 1, line 16 as follows:

MR devices of this kind are generally known and described in numerous documents, for example, in ~~WO 00/72034 A1~~ US 6,377,045 which discloses a magnetic resonance device for carrying out the SENSE method by means of an RF coil array. The optimization of RF coil arrays is of major importance for MR imaging. For given clinical protocols a specific optimization of the image quality can be achieved by parameter variation of the coil number, the coil configuration and the arrangement of the coils. The object basically consists of obtaining a maximum signal-to-noise ratio (SNR). A high SNR in deeper layers is achieved by means of RF coils having a given minimum size. However, the maximum number of RF coils in relation to the given size of the object to be examined, for example, a patient, is thus limited. When using parallel ~~SENSE or SMASH~~ imaging methods such as SENSE or SMASH, ~~however, increasing~~ the number of RF coils is ~~an absolute necessity~~ increased so as to obtain a high reduction factor for a corresponding temporal resolution.

On page 2, before the paragraph beginning on line 1, please insert the heading:

Summary

On page 2, please amend the paragraph spanning lines 1-2 as follows:

This object is achieved ~~in accordance with the invention~~ by means of an MR device ~~as disclosed in claim 1~~ which includes:

On page 2, please delete the paragraph spanning lines 27-29 in its entirety:

~~Advantageous embodiments of the MR device in accordance with the invention are disclosed in the dependent claims. An RF coil system for such an MR device is disclosed in claim 10.~~

Please amend the paragraph starting on page 2, line 30 and continuing to page 3, line 2 as follows:

In the MR device in accordance with the invention at least the RF coils within the individual RF coil arrays are decoupled from one another. ~~Only one~~ One RF coil array can thus be used at any time for the excitation (in the transmit mode) or for the acquisition of MR signals (in the receive mode), so that the RF coils of the other RF coil arrays are electronically switched off. The switching over between the individual RF coil arrays can be carried out directly from a control console for the relevant imaging protocol or by the relevant imaging sequence itself.

On page 3, please amend the paragraph spanning lines 12-20 as follows:

In conformity with a further embodiment ~~of the invention~~, a first RF coil array is advantageously optimized for the SENSE method or the SMASH method and a second RF coil array is optimized as a synergy coil array. With respect to the SENSE method, reference is made to the publication by K. Prüssmann "SENSE: Sensitivity Encoding for Fast MRI", Magnetic Resonance in Medicine 42: 952 - 962 (1999) and ~~WO 99/54746~~ US 6,326,786 in which this method is described in detail. The SMASH method is described in ~~WO 98/21600~~ US 5,910,728. The RF coil array for SENSE or SMASH methods is then optimized in order to achieve a reduction of the acquisition time, whereas a synergy coil array is intended to achieve a maximum signal-to-noise ratio. A synergy coil array is described in US 5,945,826 and US 5,600,244.

On page 3, please amend the paragraph spanning lines 21-26 as follows:

~~Preferred further versions of this embodiment are disclosed in the claims 4 to 6.~~ In conformity ~~therewith~~ with other embodiments, ~~it is arranged in particular that~~ the RF coils of the SENSE or the SMASH RF coil arrays are situated nearer to the object to be examined, are smaller in size and larger in number and are arranged so as to overlap one another, as opposed to the RF coils of the synergy coil array which are preferably arranged so as that they do not overlap one another.

Please amend the paragraph starting on page 3, line 27 and continuing to page 4, line 5 as follows:

Generally speaking, switching over between the various RF coil arrays in conformity with the clinical protocol can take place after the acquisition of complete sets of image data. However, ~~as is indicated in claim 7~~ it may also be arranged that all RF coils are connected to a separate channel of the transmit/receive unit and that the control unit is arranged for the simultaneous acquisition of MR signals by means of RF coils of different RF coil arrays. MR signals can thus be acquired simultaneously from different regions and with a different destination direction, thus enabling advantageous applications. For example, it is feasible to reconstruct images in real time already during the MR data acquisition, for example, from MR data acquired by an RF coil array which has been optimized for the SENSE method. Images of this kind then depict changes of the object to be examined with a high temporal resolution as is of interest, for example, for MR angiography. Such real-time data can also be fed back to the data acquisition so as to enable motion correction or control of the data acquisition in general.

On page 4, please amend the paragraph spanning lines 6-15 as follows:

It is in principle also possible to switch over the mutually decoupled RF coil arrays within an imaging sequence (switching time approximately 100 μs). New

methodic protocols can thus be applied, enabling the use of the different RF coil arrays for the data acquisition from only sub-regions of the k space. For example, the data of the central k space can be measured with a high SNR, for example, by means of a synergy coil array, whereas the high k spatial frequencies are acquired at a high speed, for example, by means of a SENSE RF coil array. The corresponding images can be acquired by way of a suitable calibration, for example, of the SENSE coil array to the synergy coil array, and an adapted reconstruction. The use of an MR device thus elaborated, ~~as disclosed in claim 9,~~ enables combination of the advantages of a reduction of the measuring time and a maximum SNR.

On page 4, after the paragraph ending on line 15, please add the following new paragraph:

Advantages of the present application will be apparent to those of ordinary skill in the art upon reading and understanding the following detailed description.

On page 4, before the paragraph beginning on line 18 please insert the heading and paragraph:

Brief Description of the Drawings

The invention may take form in various components and arrangements of components, and in various steps and arrangements of steps. The drawings are only for purposes of illustrating the preferred embodiments and are not to be construed as limiting the invention.

On page 4, please delete the paragraph spanning lines 18-19 in its entirety:

~~The invention will be described in detail hereinafter with reference to drawings. Therein:~~

On page 5, before the paragraph beginning on line 1, please insert the heading:

Detailed Description

On page 5, pleasc amend the paragraph spanning lines 2-17 as follows:

Fig. 1 is a diagrammatic representation of an MR device in accordance with the invention for forming MR images of the patient 15 who is arranged on a patient table 19 in the examination zone. The MR device includes a main field magnet system 10 with a plurality of main field magnets which generate a steady, uniform magnetic field in the longitudinal direction of the patient 15. A gradient coil system with a plurality of gradient coils 11, 12, 13 is provided so as to generate magnetic gradient fields. Furthermore, an RF coil system 14 is provided to generate RF excitation pulses and to acquire MR signals from the excited examination zone, the construction of said RF coil system in accordance with the invention being described in detail hereinafter. A transmit/receive unit 16 is provided in order to control the individual RF coils of the RF coil system 14 in the transmit mode or the receive mode for the MR signals received by the individual RF coils. The MR signals received are processed by a processing unit 17 so as to form desired MR images. Finally, a control unit 18 is provided for the control of the transmit/receive unit 16, the processing unit 17 and the various coil systems 10 to 14. Further details of the basic construction of such an MR device as well as of its operating principle are generally known, for example, from the previously mentioned ~~WO 00/72034~~ US 6,377,045 and, therefore, will not be elaborated herein.

On page 5, please amend the paragraph spanning lines 18-27 as follows:

Fig. 2a shows a first embodiment of an RF coil system 141 in accordance with the invention. The Figure shows two RF coil arrays 20, 21 which are formed as surface coils and are arranged one over the other around the patient 15 who is shown in a cross-sectional view. The RF coil array 20 which is nearest to the patient 15 includes a total number of eight RF coils 201 to 208 which are arranged adjacent one

another and without overlapping one another. These coils have been optimized for application of the SENSE technique. On these coils there are arranged the four RF coils 211 to 214 of the second RF coil array 21, that is, in such a manner that each time two RF coils slightly overlap one another and that all RF coils 201 to 208 of the first RF coil array 20 are covered. The RF coils 211 to 214 are configured as synergy coils. Coil elements of a synergy coil array (usually surface coils) receive MR signals from object areas in the vicinity of the coils, with an improved signal-to-noise ratio in comparision to a whole-body coil. See, for example, US 5,945,826 and US 5,600,244.

On page 6, please amend the paragraph spanning lines 17-33 as follows:

An advantageous application of an MR device in accordance with the invention, in which all RF coils of the RF coil system used are decoupled from one another so that in principle MR signals can be received from all RF coils simultaneously, will be described in detail hereinafter with reference to Fig. 5. In this respect it is assumed that a synergy coil array and a SENSE coil array are provided. The MR data 40 acquired ~~consists of~~ includes synergy coil data 41 on the one hand and SENSE coil data 42 on the other hand. The k space as well as the filling of the k space with the acquired MR data are shown each time symbolically. The SENSE data 42 can be used for the reconstruction in real time, during the data acquisition (of the synergy data 41), of images 43, 44, 45 from the k space data sets which are interleaved in different ways and reflect with a high temporal resolution the changes of the object to be measured. The real-time data can, moreover, be fed back to the MR data acquisition (feedback 47), for example, in order to carry out a motion correction or a general control of the data acquisition. Finally, a conventional MR image 46 with a high signal-to-noise ratio can also be reconstructed from the synergy coil data 41. It is to be noted that this procedure is not limited to the combination of a synergy coil system and a SENSE coil system and that it can in principle be used also in the case of combination of other RF coil arrays.

On page 8, after the last paragraph ending on line 34, please insert the following new paragraph:

The invention has been described with reference to the preferred embodiments. Modifications and alterations may occur to others upon reading and understanding the preceding detailed description. It is intended that the invention be constructed as including all such modifications and alterations insofar as they come within the scope of the appended claims or the equivalents thereof.